

Data Submitted (UTC 11): 10/31/2023 5:21:46 AM

First name: Lauren

Last name: McCain

Organization: Defenders Of Wildlife

Title:

Comments: October 30, 2023

USDA Forest Service

Rocky Mountain Region

Attn: Reviewing Officer

C/O Director of Strategic Planning

2nd floor, 1617 Cole Blvd. Building 17

Lakewood, CO 80401

Subject: Regional Forester's Species of Conservation Concern List, Grand Mesa, Uncompahgre, Gunnison National Forests Revised Land Management Plan

Responsible Official: Frank Beum, Regional Forester, Region 2

Submitted via: [https://www.fs.usda.gov/goto/gmug/forestplan\\_objections](https://www.fs.usda.gov/goto/gmug/forestplan_objections)

Dear Reviewing Officer:

Defenders of Wildlife files this objection to Regional Forester's Species of Conservation Concern List for the Grand Mesa, Uncompahgre, Gunnison (GMUG) National Forests under the process identified in 36 C.F.R. § 219 Subpart B. Notice of availability of the Draft Record of Decision (Draft ROD), Final Environmental Impact Statement (FEIS), and the Revised Land Management Plan (Revised Plan) was published in the Grand Junction Daily Sentinel, the GMUG's newspaper of record, on August 30, 2023, making this objection timely.

This objection has previously been submitted by Rocky Smith (lead objector) and others. This is my official notice that I endorse and co-sign the Smith et al. objection.

Sincerely,

Lauren McCain

Senior Federal Lands Policy Analyst

Defenders of Wildlife

600 17th St., Suite 450N

Denver, CO 80202

720.943.0453

[lmccain@defenders.org](mailto:lmccain@defenders.org)

OBJECTION II - NON-DESIGNATIONS OF NUMEROUS SPECIES OF CONSERVATION CONCERN

TABLE OF CONTENTS

I. THE REGIONAL FORESTER'S SPECIES OF CONSERVATION CONCERN LIST EXCLUDES NUMEROUS DESERVING PLANT SPECIES 1

II. THE REGIONAL FORESTER'S SPECIES OF CONSERVATION CONCERN LIST EXCLUDES NUMEROUS DESERVING PLANT SPECIES 12

### III. BIGHORN SHEEP 23

#### I. THE SPECIES OF CONSERVATION CONCERN IDENTIFICATION PROCESS IS BADLY FLAWED

##### A. THERE CAN STILL BE SUBSTANTIAL CONCERN FOR SPECIES THAT DON'T STRICTLY MEET ALL CRITERIA

The Regional Forester's protocol for identifying SCC violates the National Forest Management Act ("NFMA"). NFMA imposes a substantive duty that requires the Forest Service, as it develops and revises plans, to "provide for the diversity of plant and animal communities" in all units of the National Forest System. 16 U.S.C. § 1604(g)(3)(B). The 2012 Planning Rule directs the Forest Service to "provide the ecological conditions to both maintain the diversity of plant and animal communities and support the persistence of most native species in the plan area." 36 C.F.R. § 219.9. The SCC identification process used for the GMUG is not consistent with the Forest Service's planning directives, fails to use and document best available scientific information ("BASI"), and results in excluding imperiled species that warrant inclusion on the SCC list.

We addressed this issue in our draft plan and DEIS comments in the appendix of HCCA et al. 2021 (Coalition comments), starting at 310. We reemphasize our key points below.

Under the 2012 Planning Rule, a species of conservation concern "is a species, other than federally recognized threatened, endangered, proposed, or candidate species, that is known to occur in the plan area and for which the regional forester has determined that the best available scientific information indicates substantial concern about the species' capability to persist over the long-term in the plan area." 36 C.F.R. § 219.9(c). The Forest Service is required to "maintain a viable population of each species of conservation concern within the plan area." *Id.* at § 219.9(b)(1).

The regional forester has discretion in determining the species of conservation concern ("SCC") for a national forest; however, such determinations are made under the authority of the National Forest Management Act ("NFMA"). *Id.* at 219.(1)(a). The Administrative Procedure Act ("APA") provides the authority for court review of decisions under NFMA. *Pit River Tribe v. U.S. Forest Serv.*, 469 F.3d 768, 778 (9th Cir. 2006). Under the APA, a court reviewing a SCC determination may set aside the decision if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). A court will strike down a determination as arbitrary and capricious if the regional forester relied on factors Congress did not intend it to consider, entirely failed to consider an important aspect of the problem, or offered an explanation that runs counter to the evidence before the agency. *Wyoming v. U.S. Dep't of Agric.*, 661 F.3d 1209, 1227 (10th Cir. 2011).

The Forest Service's Land Management Planning Handbook offers direction for regional foresters on determining species of conservation concern. The handbook notes that the criteria for identifying species of conservation concern are also the criteria for identifying potential species of conservation concern. FSH 1909.12.52c. The criteria for determining SCC are:

- 1.The species is native to, and known to occur in, the plan area; and
- 2.The best available scientific information about the species indicates substantial concern about the species' capability to persist over the long term in the plan area.

*Id.* The two criteria, naturally, match the 2012 Planning Rule's SCC definition. The handbook further directs that species in the following categories should be considered as potential SCC:

- a. Species with status ranks of G/T3 or S1 or S2 on the NatureServe ranking system.
- b. Species listed as threatened or endangered by relevant States, federally recognized Tribes, or Alaska Native Corporations.
- c. Species identified by Federal, State, federally recognized Tribes, or Alaska Native Corporations as a high priority for conservation.
- d. Species identified as species of conservation concern in adjoining National Forest System plan areas (including plan areas across regional boundaries).
- e. Species that have been petitioned for Federal listing and for which a positive "90-day finding" has been made.
- f. Species for which the best available scientific information indicates there is local conservation concern about the species' capability to persist over the long-term in the plan area due to:

(1) Significant threats, caused by stressors on and off the plan area, to populations or the ecological conditions they depend upon (habitat). These threats include climate change.

(2) Declining trends in populations or habitat in the plan area.

(3) Restricted ranges (with corresponding narrow endemics, disjunct populations, or species at the edge of their range).

(4) Low population numbers or restricted ecological conditions (habitat) within the plan area.

Id. at 12.52d.

In determining SCC for the GMUG Forest Plan revision, the regional forester decided that substantial concern about a species' capability to persist over the long-term in the GMUG plan area is warranted only if, at the time of plan development, the best scientific information indicates that the species has either:

1) A NatureServe Ranking of G/T 1 or 2 for which there is no evidence that the known threats to that species do not operate on the planning unit; or

2) A species does not have a NatureServe Ranking of G/T 1 or 2 but all four of the indicators of conservation concern are demonstrated for that species. Those indicators of conservation concern are:

a. Indicator 1. Significant threats, caused by stressors on and off the plan area, to populations or the ecological conditions they depend upon (habitat). These threats include climate change.

b. Indicator 2. Declining trends in populations or habitat in the plan area;

c. Indicator 3. Restricted ranges (with corresponding narrow endemics, disjunct populations, or species at the edge of their range);

d. Indicator 4. Low population numbers or restricted ecological conditions (habitat) within the plan area.

Regional Foresters Species of Conservation Concern Final List and Process Rationale.

The regional forester's four indicators of conservation concern are taken directly from the Forest Service's Land Management Planning Handbook. See FSH 1909.12.52d(3)(f). The handbook's listing of factors indicating local conservation concern about the species' capability to persist over the long-term in the plan area is neither conjunctive nor disjunctive.

In its entirety, the regional forester's rationale for requiring that all four indicators must be demonstrated for there to be substantial concern about a species' capability to persist over the long-term in the GMUG plan area is the following:

The term "substantial", meaning of considerable importance, is demonstrated in my process by all 4 indicators of conservation concern being met for a species. While species with fewer than 4 indicators might have conservation concern, that concern does not rise to the level of "substantial."

Regional Forester's Species of Conservation Concern Final List and Process Rationale. The regional forester has

not provided any explanation for why a species meeting fewer than four indicators cannot rise to the level of substantial concern about its capability to persist over the long-term.

**B. THE REGIONAL FORESTER'S SCC IDENTIFICATION PROCESS OF FILTERING OUT IMPERILED SPECIES THAT DON'T MEET ALL FOUR INDICATORS LISTED IN FSH 1909.12.10.12.52.D.3.F IS ARBITRARY AND NOT BASED ON THE REQUIREMENT IN 36 C.F.R. §219.3 TO USE AND DOCUMENT THE BEST AVAILABLE SCIENTIFIC INFORMATION.**

The regional forester's requirement that all four indicators of local conservation concern be present for there to be substantial concern about a species' capability to persist over the long-term is a misapplication of the directives and sets the bar for SCC designation inconsistently and illegitimately high given the 2012 Planning Rule's directive to "provide for the diversity of plant and animal communities, within Forest Service authority and consistent with the inherent capability of the plan area." 36 C.F.R. § 219.9. The Land Management Planning Handbook does not direct the Forest Service to prohibit SCC determinations for species that do not meet all four indicators, and the regional forester has not provided any meaningful rationale that shows there cannot or should not be substantial concern about a species' capability to persist in the absence of even one of the four indicators. In fact, a species experiencing a subset of the four indicators can be vulnerable to extirpation in the plan area.

For example, a species could have a very low population-only a few individuals, for the purposes of this example--within the GMUG plan area and there could be a significant threat to that very low population--say an invasive predator that has only recently established itself on the GMUG--while at the same time the species' population was not trending downward from its already low number, and its range was not restricted on the GMUG because the species is a habitat generalist. Nonetheless, under the regional forester's rationale for GMUG SCC determination, concern regarding this species' capability to persist locally over the long-term would be, by definition, not substantial.

Another example is that for a number of species where population trend data is missing, it has been assumed that the species is OK. Accordingly, these species could decline to near-extirpation on the GMUG and the regional forester's approach would result in the agency seeing no need to protect them. This is illogical and not what is intended by either the 2012 Planning Rule or the direction in the Land Management Planning Handbook.

The regional forester's approach to determining SCC is arbitrary and leaves a substantial number of imperiled species vulnerable and without meaningful protections to ensure that activities on the GMUG would not contribute to these species' needs for listing under the ESA. Under the ESA, a species need only meet "one or more" of five factors to be listed as threatened or endangered. The listing factors include threats (factors 1-3), "inadequacy of existing regulatory mechanisms" (factor 4), "or" "[o]ther factors' affecting the species continued existence" (factor 5). 16 USC § 1533(a)(1). It is thus harder for a species to qualify as a species of conservation concern per this regional forester's approach than it is for a species to qualify as threatened or endangered under the ESA.

The regional foresters' approach leaves at least 23 forest/woodland species without adequate protections by excluding them as SCC :

- \*Northern Goshawk
- \*Boreal owl
- \*Olive-sided flycatcher
- \*Southern red-backed vole
- \*Hoary bat
- \*Pacific marten
- \*Reflected grapefern
- \*Mingan moonwort

- \*Northern oak fern
- \*Juniper titmouse
- \*Pinyon jay
- \*Lewis's woodpecker
- \*Grace's warbler
- \*Abert's squirrel
- \*Purple Martin
- \*Flammulated owl
- \*Townsend's big-eared bat (S2)
- \*Spotted bat (S2)
- \*Silver haired bat
- \*Snowshoe hare
- \*Little brown myotis
- \*Fringed myotis
- \*Dwarf shrew

Additionally, numerous species excluded from SCC identification have timber/logging identified as a known threat, including:

- \*Northern goshawk
- \*Grace's warbler
- \*Colorado River cutthroat trout
- \*Abert's squirrel
- \*Townsend's big-eared bat
- \*Silver haired bat
- \*Hoary bat
- \*Snowshoe hare
- \*Pacific marten
- \*Little brown myotis
- \*Fringed myotis

The exclusion of these species when, as discussed in objections submitted to the GMUG forest supervisor regarding the Forest Service's arbitrary decision as to lands found suitable for timber production, is inconsistent with the Forest Service's substantive mandates to use the best available science (36 CFR 219.3); include plan components that maintain or restore the ecological integrity of terrestrial and aquatic ecosystems and watersheds in the plan area (36 C.F.R. 219.19); ensure that commercial timber harvesting is not elevated over other values including wildlife conservation (36 CFR 219.9(a)); and that logging be carried out in a manner consistent with protection of soil, watershed, fish, wildlife, recreation, and aesthetic resources (36 CFR 219.11).

The "four indicators test" fails to use the best available scientific information on extinction risk.

Under the 2012 Planning Rule, the BASI must be used and sufficiently documented, for the Regional Forester to determine: 1) which species are "known to occur in the plan area" and 2) the species for which a substantial concern exists about their "capability to persist over the long-term in the plan area." 36 C.F.R. § 219.9(c).

We raised in our comments that the International Union for Conservation of Nature (IUCN) requires species meet just one of the five criteria it uses to identify species "critically endangered," "endangered," or "vulnerable." These criteria from the IUCN Standards and Petitions Committee (2019) include:

- A. Population size reduction (past, present and/or projected)
- B. Geographic range size, and fragmentation, few locations, decline or fluctuations

- C. Small and declining population size and fragmentation, fluctuations, or few subpopulations
- D. Very small population or very restricted distribution
- E. Quantitative analysis of extinction risk (e.g., Population Viability Analysis)

The IUCN (2019) Guidelines for Using the IUCN Red List Categories and Criteria, directs that,

To list a particular taxon in any of the categories of threat, only one of the criteria, A, B, C, D, or E needs to be met. ... Only the criteria for the highest category of threat that the taxon qualifies for should be listed. For example, if a taxon qualifies for criteria A, B, and C in the Vulnerable and Endangered category and only criterion A in the Critically Endangered category, then only the criterion A met in the Critically Endangered category should be listed (the highest category of threat). [emphasis added]

The IUCN guidelines go on to explain, "[I]isting under the highest category of threat (instead of, for instance, averaging extinction risk across the five criteria) ensures a more precautionary approach to making urgent decisions based on limited information." IUCN 2019 at 74. The criteria and protocol the IUCN uses for ranking imperiled species is based in substantial science. See Harris et al. 2011 ; Betts et al. 2019; Bland et al. 2019. It is illogical that the Region 2 SCC determination rules set a higher standard than both the U.S. Fish and Wildlife Service for the ESA and the IUCN for the Red List.

In our comments we demonstrated that imperiled species can lose viability if they meet just one of the indicators. There is a substantial body of literature on the risks that small, isolated and fragmented populations face (Gilpin and Soulé 1986; Lande 1987), including environmental and demographic stochasticity (Caswell 1989; Goodman 1987; Mode and Jacobson 1987; Lande 1993), Allee effects (Allee et al. 1949), extinction due to demographic fluctuation, environmental stochasticity, inbreeding and random drifts in gene frequencies (Charlesworth and Charlesworth 1987, Soule 1987), and reduced chance for recolonization after a population is extirpated (Wagner 2002). See also O'Grady et al. (2003) on small populations and extinction risk. Brussard and Gilpin (1989) and Miller et al. (1996) reported on the critical role played by stochastic processes in the survival of small populations. Finn et al. (2023) explored the importance of population decline as an indicator of extinction risk as did Hayward et al. (2016), which is a Forest Service guidance document on identifying SCC.

The "four indicators test" is not consistent with the planning directives.

The directives demonstrate the Forest Service did not intend for the SCC identification policy to weed out species that don't meet all four section "f" indicators. For example, regarding indicator #3, the directives provide examples of SCC that do not have restricted ranges. One such species is the Cerulean warbler—a potential SCC in the Wayne National Forest in southern Ohio, and well within the core breeding range of the species. FSH 1909.12.20.23.13c.3.a. Similarly, the swift fox ranges throughout the short and mixed grass prairie of the Great Plains, and several national grasslands including the Comanche, Cimarron, Rita Blanca, and Kiowa are at the heart of the species' range. See how the directives portray these examples below.

Examples of circumstances not within the authority of the Forest Service. The following are species-specific examples of when ecological conditions necessary for the long-term persistence of a species are outside the National Forest System lands and, therefore, outside Forest Service control for providing ecological conditions to maintain viable populations of each species of conservation concern within a plan area:

[See examples on the next page.]

a. Forest clearing in South America. These South American forests provide important wintering areas for many Neotropical birds that nest in North America. The clearing of these forests for agricultural purposes adversely affects the wintering habitat and ecological conditions necessary for the continued survival of viable populations

of the Cerulean warbler. Thus, impacts to habitat outside the National Forest System may adversely affect populations of species that migrate to and from a National Forest.

Graphic omitted.

b. Land use patterns on private lands intermixed with or adjacent to National Forest System lands. The continuing agricultural uses and urbanization that is occurring east of the Rocky Mountains is causing habitat fragmentation, which reduces available habitat and ecological conditions necessary for the viability of swift fox populations. Therefore, a reduction in viable populations of this species can occur as a result of land use development and patterns outside of National Forest System lands.

Graphic omitted.\

Threats to a species' local population or habitat are sufficient to cause substantial concern about its capability to persist long-term in the planning area.

Species can fail to persist due to threats, even one threat, regardless of whether or not it meets indicator 3 or 4. The passenger pigeon's population numbered from 3-5 billion in the 1800s and ranged across the eastern half of the U.S. before it went extinct in 1914 due to 50 years of human exploitation for the bird's feathers. Under the ESA at Section 4(a), a species need only meet "one or more" of five factors to be listed as threatened or endangered. 16 USC 1533(a)(1). These are

- (A) the present or threatened destruction, modification, or curtailment of its habitat or range;
- (B) overutilization for commercial, recreational, scientific, or educational purposes;
- (C) disease or predation;
- (D) the inadequacy of existing regulatory mechanisms; or
- (E) other natural or manmade factors affecting its continued existence.

These factors A, B, C, and E are based on threats to a species or habitat, and factor D addresses whether regulations are in place to eliminate or reduce threats.

The Regional Forester's conflation of species' occurrence in the plan area with population size in the application of Indicator #4 is erroneous and does not comply with 36 CFR § 219.3.

The HCCA et al. 2021 comments criticized the use of anecdotal information to make justifications for not identifying species as SCC. We focused on making abundance estimates from species' observations and use the boreal owl and other species to make this point. We appreciate the Regional Forester has added additional context. III FEIS at 313, Appendix 3 states,

2. Anecdotal information - The information used by the Regional Forester to determine if a species meets the two criteria for a species to be identified as SCC is not anecdotal as the commenter asserts. The information used is not based on personal, non-professional observations (i.e., anecdotal), rather it is the scientific information available at the time of plan revision as required at FSH 1909.12.07. Data prepared by the Forest Service and other expert opinion (including that of Forest Service professionals) is a recognized source of scientific information at FSH 1909.12.07.13.

However, we have updated discussions of populations to provide context to the number of observations or records used to determine if a species meets the low population or restricted ecological conditions indicator. Clarifying information has also been provided in SCC tables, when available, when discussing the number of occurrences. The information which the Regional Forester used to determine if a species meets each indicator of conservation concern is documented in the species overview for each species (2018 GMUG Species

Assessment (USDA Forest Service 2018) and updated overviews in the project record), and follows FS Handbook direction for the use of Best Available Scientific information to inform the land management planning process at FSH 1909.12.07.

The response to this comment noted our concerns that the Regional Forester used sightings of individual animals in the GMUG to make guesses about the abundance of species populations. Recording verifiable sightings of individuals of an imperiled species population and undertaking occurrence studies are important to assessing presence or absence from the plan area. However, the information the Regional Forester has provided for several species considered but not identified as SCC does not indicate that occurrence numbers were derived from trend and abundance surveys. These numbers cannot be used to extrapolate population sizes. See the examples below that demonstrate the Regional Forester's flaw using this approach.

Northern goshawk. The GMUG's species' overview notes northern goshawks have been sighted 214 times in the past 20 years. The number could represent 214 separate observations of the same individual, though we doubt this is the case. We aren't disputing the Forest Service's number of recorded sightings. Yet, 214 is not the species' population size on the GMUG. We acknowledge that these records come from the Forest Service's Natural Resources Information System, but they cannot be used to make inferences about population size unless the numbers came from an abundance study. The northern goshawk's habitat has been significantly changed by sudden aspen decline and spruce bark beetle, as well as timber harvesting and other types of vegetation management. The modeled habitat figure reported in Table 53 of Appendix 3, Volume 2 of the FEIS is from 18 years ago. The overview reported that no individuals have been spotted in the GMUG for seven years. These facts point to identifying the northern goshawk as an SCC.

Boreal owl. The same argument holds for the boreal owl. 347 occurrences recorded across a 20-year period do not indicate abundance, though the overview does provide some distribution information. The overviews were finalized over five years ago. The species' habitat on the GMUG has changed significantly in a relatively short time period due to insects and disease. Boreal owls have not been seen on the forest since 2016-seven years ago.

Flammulated owl. The responses to comments (FEIS III at 315), "Flammulated owl - listed as 157 observations. However, the map in the species overview shows that the observations are not repeats and are broadly scattered across the plan area. The indicators table (FEIS, Vol II, Appendix 3, table 53) has been updated to reflect this context." We see nothing in table 53 that provides helpful context. Moreover, the map referenced in the flammulated overview does not depict what the response quoted above says the map shows. This is the map from page 82 of the flammulated owl overview:

map omitted.

The Regional Forester acted arbitrarily in requiring that all four local conservation concern criteria be met to designate a species as a SCC for the GMUG Forest Plan revision while not requiring the same to designate a species as a SCC for the Rio Grande Forest Plan revision.

"Within certain bounds, agencies have the power to adjust policies and rulings in light of experience." Cal. Trout v. F.E.R.C., 572 F.3d 1003, 1023-24 (9th Cir. 2009). However, when an agency establishes a general policy by which its exercise of discretion will be governed, an irrational departure from that policy may constitute action that must be overturned as arbitrary, capricious, [or] an abuse of discretion within the meaning of the [APA]." INS v. Yueh-Shaio Yang, 519 U.S. 26, 32, 117 S.Ct. 350, 136 L.Ed.2d 288 (1996) (internal quotation marks omitted). When an agency departs from prior decisions, it must "clearly set forth the ground for its departure from prior norms." W. States Petroleum Ass'n v. EPA, 87 F.3d 280, 284 (9th Cir. 1996). Failure to offer a sufficient explanation for differential treatment of rules or policy may be found arbitrary and capricious under the APA. See id. at 285.



In May 2020, the Forest Service completed the Rio Grande National Forest ("RGNF") Plan revision. As part of the revision process, the Regional Forester for the Rocky Mountain Region determined SCC for the RGNF. For that determination, the Regional Forester relied on the same four criteria used to determine the GMUG SCC:

Species for which the best available scientific information indicates there is local conservation concern about the species' capability to persist over the long-term in the plan area due to:

- (1) Significant threats, caused by stressors on and off the plan area, to populations or the ecological conditions they depend upon (habitat). These threats include climate change.
- (2) Declining trends in populations or habitat in the plan area.
- (3) Restricted ranges (with corresponding narrow endemics, disjunct populations, or species at the edge of their range).
- (4) Low population numbers or restricted ecological conditions (habitat) within the plan area.

Rio Grande National Forest, Draft Assessment 5: Identifying and Assessing At-risk Species ("RGNF Assessment") at 35.

The Regional Forester did not, however, require that a species meet all four local conservation concern criteria in order to be designated as a RGNF SCC. Rather, the Forester considered the four criteria to be disjunctive-meeting or attaining any subset of the criteria was sufficient for a species to be listed as a RGNF SCC.

In the rationale for the GMUG SCC determination, the Regional Forester did not explain why he had departed from the SCC determination process used three years earlier for the Rio Grande Forest Plan revision. See Regional Foresters Species of Conservation Concern Final List and Process Rationale. The Regional Forester's SCC designation process for the GMUG Plan revision is therefore arbitrary and capricious.

The Regional Forester failed to identify imperiled species that met criteria in FSH 1909.12.10.12.52.d as SCC.

As indicated above, the Regional Forester failed to consider imperiled species that could be included in three categories (b, c, and d) in FSH 1909.12.10.12.52.d of possible SCC. These three categories represent species for which other authoritative sources have determined that a concern exists about the species' ability to persist, i.e., across the country, throughout a state, or in another national forest. Thus, in the case of the GMUG, the Regional Forester should have considered species in the following categories to be SCC: species listed as threatened or endangered by the state of Colorado and applicable Tribes; species determined to be of high conservation priority for the state of Colorado and applicable Tribes; and SCC in the Rio Grande National Forest (which revised its land management plan in 2020).

## SUGGESTED IMPROVEMENTS

The Regional Forester must reconsider the determination that substantial concern about a species' capability to persist over the long-term in the GMUG plan area is present or warranted only when a species meets all four the indicators of conservation concern listed in the Forest Service's Land Management Planning Handbook. See FSH 1909.12.10.12.52.d.3.f. The Regional Forester must reconsider species that fall into the categories of FSH 1909.12.10.12.52.b.c&d. Science on extinction risk must inform SCC determinations.

## REFERENCES

Betts, J., Young, R. P., Hilton-Taylor, C., Hoffmann, M., Rodríguez, J. P., Stuart, S. N., & Milner-Gulland, E. J. (2020). A framework for evaluating the impact of the IUCN Red List of threatened species. *Conservation*

Biology, 34(3), 632-643.

Bland, L. M., Nicholson, E., Miller, R. M., Andrade, A., Carré, A., Etter, A., ... & Keith, D. A. (2019). Impacts of the IUCN Red List of Ecosystems on conservation policy and practice. *Conservation letters*, 12(5), e12666.

Finn, C., Grattarola, F., & Pincheira-Donoso, D. (2023). More losers than winners: investigating Anthropocene defaunation through the diversity of population trends. *Biological Reviews*.

Harris, J. B. C., Reid, J. L., Scheffers, B. R., Wanger, T. C., Sodhi, N. S., Fordham, D. A., & Brook, B. W. (2012). Conserving imperiled species: a comparison of the IUCN Red List and US Endangered Species Act. *Conservation Letters*, 5(1), 64-72.

Hayward, G. D., Flather, C. H., Rowland, M. M., Terney, R., Mellen-McLean, K., Malcolm, K. D., ... & Boyce, D. A. (2016). Applying the 2012 Planning Rule to conserve species: A practitioner's reference. Unpublished paper. Washington, DC: US Department of Agriculture, Forest Service. 78 p.at 72.

IUCN Standards and Petitions Committee. (2019). Guidelines for Using the IUCN Red List Categories and Criteria. Version 14. Prepared by the Standards and Petitions Committee. Downloadable from <http://www.iucnredlist.org/documents/RedListGuidelines.pdf>. p. 17.